FEB - 3 2015

**MEMORANDUM**

**SUBJECT:** Review of Human Health Risk Assessment Workplan for the Occidental Chemical Corporation Facility Located in Wichita, Kansas

**FROM:** Greg McCabe
ENST/EDAB

RCRA
534409

**TO:** Brad Roberts
AWMD/WRAP/KNRP

We have completed our review of the Human Health Risk Assessment Work Plan, dated December 18, 2014, for the Occidental Chemical Corporation site located in Wichita, Kansas. Based on our review, we have the following comments. Please feel free to contact me at x7709 if you have any questions.

**Specific Comments**

**1. Page 1, Section 1.0.** The text states that the facility is located adjacent to a nature center. Have any ecological risk assessment efforts been undertaken at the facility?

**2. Page 1, Section 1.0.** The final paragraph states that the HHRA will be conducted in accordance with the listed U.S. Environmental Protection Agency guidance documents. It is possible that additional EPA guidance documents may need to be consulted during preparation of the HHRA.

**3. Page 1, Section 1.0.** The fifth bulleted item identifies the EPA Standard Default Exposure Factor Guidance from 1991. That guidance was updated on February 6, 2014 (EPA, 2014a).

**4. Page 3, Section 2.0.** The text states that only the last 4 years of groundwater data will be considered. How was that particular timeframe arrived at? Are any trends apparent in the last four years of data? What evidence is available which would verify that the last four years of groundwater data is representative of current groundwater conditions?

**5. Page 3, Section 2.0.** The text states that analytes detected in less than 5% of the samples will be eliminated from consideration as COPCs. Please note that, because spreadsheet technology is so readily available and easy to use, Region 7 does not allow the elimination of COPCs based on frequency of detection. Instead, all contaminants whose concentrations exceed the EPA RSLs should be identified as COPCs for risk assessment purposes.

| CONCURRENCE: Kristina:7665:020315:H:/ENST/EDAB/RISKASSESSORS/MEMORANDUMS/FY2015/HHRA/OcvcidentalHHRAWorkPlan.docx | | | | |
|---|---|---|---|---|
| DIV/BR | ENST/EDAB | ENST/EDAB | | |
| NAME | McCabe | Beringer | | |
| DATE | 2/3/15 | 02/03/15 | | |
| INITIALS | | WDB | | |

**6. Page 3, Section 2.0.** MCLs are not strictly health-based, and should not be used for contaminant screening for risk assessment purposes. For all contaminants, including those with MCLs, the EPA RSLs should be used for the initial screening process.

**7. Page 3, Section 2.0.** The text notes that "land use will be deed restricted to industrial/commercial use." Exactly what is the current status of the proposed deed restriction? Has it been formalized and implemented yet? If not, when is that expected?

**8. Page 5, Section 3.1.1.** We could find no figure which clearly identifies the locations of the Inorganics Area and the Organics Area. Those areas should be clearly demarcated in a figure.

**9. Page 5, Section 3.1.1**. A detailed map of the contaminated groundwater plume needs to be included in the risk assessment.

**10. Page 7, Section 3.1.1.** We could find no figures which clearly identify the location of the Nature Center, or other offsite properties.

**11. Page 7, Section 3.1.1.** Are the CSMs in Figures 4-6 meant to represent a current use scenario, a future use scenario, or both?

**12. Page 8, Section 3.1.2.** The top paragraph reports that impacts associated with identified hotspot locations will be assessed as part of the area-wide evaluation. We typically expect that identified hot spots will be specifically evaluated in the risk assessment. We do not allow the combination of hotspot data with area-wide data, such that the hotspot data is "diluted" by the area-wide data, resulting in an artificially low estimate of risk.

**13. Page 8, Section 4.1.** The text states that "Spills have also occurred, however, and it has been assumed that the majority of the visual impacts due to the spills would have been removed and cleaned up immediately after the spill". Such an assumption does not appear to us to be warranted. What soil data, or other evidence, exists which would support the accuracy of this assumption?

**14. Page 10, Section 4.3.** A qualitative, rather than quantitative, evaluation of the future use of groundwater scenario will not be acceptable. The evaluation must be quantitative.

**15. Page 10, Section 4.3.** When identifying groundwater exposure point concentrations, Region 7 assumes that a future well could be installed in the most contaminated part of the plume. Use of the maximum contaminant concentration is therefore acceptable. A groundwater EPC based on a 95% UCL of the mean may also be acceptable, so long as only samples from the most contaminated part of the plume are used, and the number of those samples is statistically valid (EPA, 2014b).

**16. Page 10, Section 4.3.** The text states that building pressurization was undertaken as an interim corrective measure following an indoor air evaluation. What were the results of the indoor air evaluation? The EPA regulations require that risk assessments be prepared based on the absence of any remedial action (EPA, 1990). Thus, the indoor air concentrations identified prior to the building pressurization measure must be used in the risk assessment, rather than the indoor air levels present after the remedial action was undertaken.

**17. Page 11, Section 4.4.1.** The text in this section, and in Section 4.4.2, states that the inhalation in indoor air pathway will be based on sample results from subsurface soil. The EPA guidance

recommends against the use of soil data to derive indoor air concentrations for risk assessment purposes (EPA, 2002). Soil gas data should be used instead. Soil gas samples and indoor air samples should be taken concurrently, so that it can be determined whether or not the vapor intrusion pathway is complete.

**18. Page 13, Section 4.4.4.** The text here states that the future use of off-site groundwater will be evaluated quantitatively evaluated, while the text on page 10 states that this scenario will be evaluated only qualitatively. Clarification is necessary. Regardless, the EPA Region 7 will not accept a qualitative evaluation of the use of potable groundwater. Also, please see Comment 15 above, regarding the identification of the groundwater exposure point concentration.

**19. Page 14, Section 4.5.** ProUCL will identify a "recommended" 95% UCL. That recommended value should be used in the risk assessment.

**20. Page B-4, Section 2.4.** Please see comments 5 and 6 above, regarding the unacceptability of eliminating COPCs based on the frequency of detection, and the comparison of groundwater contaminant concentrations with RSLs, rather than MCLs, for screening purposes.

**21. Appendix A.** Based on the compounds and sample results shown in the tables in this appendix, the site should be sampled for TCDD, and other dioxin-related compounds. Helpful guidance for addressing dioxin and dioxin-like compounds in a human health risk assessment can be found at:

http://www.epa.gov/raf/files/tefs-for-dioxin-epa-00-r-10-005-final.pdf

**References**

U.S. EPA. 1990. National Oil and Hazardous Substances Pollution Contingency Plan; Final Rule. Federal Register, Vol. 55, No. 46.

U.S. EPA. 2002. OSWER Draft Guidance for Evaluating the Vapor Intrusion to Indoor Air Pathway from Groundwater and Soils (Subsurface Vapor Intrusion Guidance). EPA-530-D-02-004. Office of Solid Waste and Emergency Response, Washington, D.C.

U.S. EPA. 2014a. Human Health Evaluation Manual, Supplemental Guidance: Update of Standard Default Exposure Factors. OSWER 9200.1-120. Office of Solid Waste and Emergency Response, Washington, D.C.

U.S. EPA. 2014b. Determining Groundwater Exposure Point Concentrations. OSWER Directive 9283.1-42. Office of Solid Waste and Emergency Response, Washington, D.C.